

4.10 NOISE

This section provides an evaluation of potential noise impacts associated with the implementation of the current SDP proposal described in this report. The information presented in this section is a summary of the Acoustical Analysis Report for the Westfield Carlsbad Project (Noise Study) prepared by HELIX (2012b). The detailed Noise Study is contained in Appendix E.

4.10.1 Environmental Setting

The following provides an explanation of the characteristics of noise, noise measurement, and community noise standards. The existing noise environment of the SP area is described later in this section.

Noise and Sound Level Descriptors

Noise is generally defined as unwanted sound. Whether a sound is considered a noise depends on the source of the sound, the loudness relative to the background noise, the time of day, the surroundings and the listener. All noise level or sound level values presented herein are expressed in terms of decibels (dB) with A-weighting (dBA) to approximate the hearing sensitivity of humans. Time-averaged noise levels of one hour are expressed by the symbol “ L_{EQ} ,” unless a different time period is specified. Some noise level data may be presented as octave-band-filtered and/or A-octave-band-filtered data, which are a series of sound spectra centered about each stated frequency, in which half of the bandwidth is above and half of the bandwidth is below each stated frequency. This type of data is typically used for machinery noise analysis and barrier-effectiveness calculations.

The Community Noise Equivalent Level (CNEL) is a 24-hour sound level average, in which sound levels measured during evening and nighttime hours are weighted. Sound levels measured during the evening hours, which are between 7:00 p.m. and 10:00 p.m., have an added five-dB weighting. Sound levels measured during the nighttime hours, which are between 10:00 p.m. and 7:00 a.m., have an added 10-dB weighting. The Day-Night Sound Level (L_{DN}) is a 24-hour average, in which sound levels have an added 10-dB weighting for the same nighttime hours as CNEL, but no added weighting on the evening hours. Sound levels expressed in CNEL are always based on dBA. These data unit metrics are used to express noise levels for measurement, municipal noise ordinances and regulations, land use guidelines, and enforcement of noise ordinances.

Noise emission data are often provided using the industry standard format of Sound Power, which is the total acoustic power radiated from a given sound source as related to a reference power level. Sound Power differs from Sound Pressure, which measures the fluctuations in air pressure caused by the presence of sound waves, and is the format generally used to describe noise levels as heard by the receptor. Sound Pressure is the actual noise experienced by a human or registered by a sound level instrument. When Sound Pressure is used to describe a noise source, it must specify the distance from the noise source to provide complete information. Sound Power is a specialized analytical method to provide information without the distance requirement, but it may be used to calculate the Sound Pressure at any desired distance.

Applicable Noise Standards

City of Carlsbad Municipal Code

The City of Carlsbad Municipal Code (2008a) provides noise limits for construction activities (i.e., erection, demolition, alteration, or repair of buildings or structures; grading or excavation of land). Section 8.48.010 states that any construction which would create disturbing, excessive, or offensive noise after sunset on any day and before 7:00 a.m., Monday through Friday, and before 8:00 a.m. on Saturday would be in violation of the code. Construction also is prohibited on Sundays and select federally recognized holidays. No zoning-based stationary operational noise limits are included in the City of Carlsbad Municipal Code.

City of Carlsbad General Plan Noise Element

The City of Carlsbad has established noise guidelines in the Noise Element of the City's General Plan. The primary goal of the Noise Element is to achieve and maintain an environment which is free from objectionable, excessive or harmful noise. Policies applicable to this analysis include:

- Enforce the policy of the City that 60 dBA CNEL is the exterior noise level to which all residential units should be mitigated.
- Control harmful or undesirable sounds through the planning and regulatory process with emphasis on noise/land-use compatibility planning.
- Attempt to control noise primarily at its source. Where this is not feasible, controls along the transmission path of the noise should be required.

- Control noise generated through its own functions and activities and minimize noise impacts resulting from City-sponsored or approved activities.
- Require the use of project design techniques, such as, increasing the distance between the noise source and the receiver; placing non-noise-sensitive uses such as parking areas, maintenance facilities, and utility areas between the source and the receiver; using non-sensitive structures, such as a garage, to shield noise-sensitive areas; and orienting buildings to shield outdoor spaces from a noise source to minimize noise impacts during any discretionary review of a residential or other noise sensitive project.
- Discourage the exclusive use of noise walls in excess of six feet in height as mitigation for noise along Circulation Element roadways.
- Utilize natural barriers such as site topography or constructed earthen berms to mitigate noise on a project. When noise walls are determined to be the only feasible solution to noise mitigation, then the walls shall be designed to limit aesthetic impacts. When over-height walls are necessary to mitigate noise, a berm/wall combination with heavy landscaping, a terraced wall heavily landscaped, or other similar innovative wall design technique shall be used to minimize visual impacts.
- Provide healthy and productive work environments that do not cause hearing damage or other adverse noise-related health impacts to workers in the City of Carlsbad.
- If the acoustical study shows that exterior noise levels cannot be mitigated to the level allowable as identified in this policy or less, the development should not be approved without one or more of the following findings:
 - Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect (noise).
 - Changes or alterations to avoid or substantially lessen the significant environmental effect (noise) are within the responsibility and jurisdiction of another public agency and not the City of Carlsbad. Such changes have been adopted by such other agency or can and should be adopted by such other agency.
 - Specific economic, social, or other considerations make infeasible the mitigation measures or project alternatives to avoid or substantially lessen the significant environmental effect (noise).

City of Carlsbad Noise Guidelines Manual

According to the City of Carlsbad Noise Guidelines Manual (1995), commercial uses are conditionally compatible with exterior noise exceeding 65 CNEL and interior noise levels of commercial buildings are not to exceed 55 dBA L_{EQ} . The Manual also indicates that exterior residential noise impacts above 60 CNEL shall be mitigated to 60 CNEL, and that interior noise impacts to residences shall not exceed 45 CNEL.

County of San Diego

The City of Carlsbad Ordinances do not regulate General Nuisance noise and have no noise limits for stationary noise sources, such as heating, ventilation, and air conditioning (HVAC) units. The City has specified that analysis of stationary noise levels should be based on noise limits contained in the County of San Diego regulations.

The County of San Diego Noise Ordinance Section 36.404, General Sound Level Limits, provides one-hour average sound level limits for land use zoning types. Sound level limits for residential land uses are 55 dBA L_{EQ} during the hours of 7:00 a.m. to 10:00 p.m. and 50 dBA L_{EQ} during the hours of 10:00 p.m. to 7:00 a.m. All commercial zones have a limit of 60 dBA L_{EQ} during the hours of 7:00 a.m. to 10:00 p.m. and 55 dBA L_{EQ} during the hours of 10:00 p.m. to 7:00 a.m. The sound level limit at a location on a boundary between two zones (e.g., the commercial zone of the SP area and residential zone of the adjacent multi-family homes) is the arithmetic mean of the respective limits for the two zones. Therefore, the sound level limit for daytime noise at receptors in the vicinity of Westfield Carlsbad would be 57.5 dBA L_{EQ} and the nighttime noise limit would be 52.5 dBA L_{EQ} .

City of Oceanside

As described in Section 3.0, *Project Description*, the project site is located largely within the City of Carlsbad, but is immediately proximate to the City of Oceanside and some parking lot areas on the north side of the SP area are located within the City of Oceanside. Therefore, noise generated by the project has potential to extend into the City of Oceanside, although no noise-sensitive receptors occur in the portion of Oceanside closest to the project site. While noise spillage into another jurisdiction may occur, the City of Carlsbad noise regulations are used in this analysis since the project is under their jurisdiction and subject to their discretionary approval. In addition, the potential for impacts to noise-sensitive receptors in Oceanside is minimal due to their distance from the Specific Plan area. The

City of Oceanside noise regulations policies are presented in the Noise Study (Appendix E) for reference purposes only.

Existing Noise Levels

The noise environment in the SP area is mainly influenced by transportation noise generated by SR-78, which runs east-west approximately 500 feet north of the shopping center property. Vehicular traffic noise is also generated on the adjacent local roadways, including El Camino Real, Marron Road, and Monroe Street/unnamed private loop road, with a minor contribution from other commercial areas east of El Camino Real. The existing Westfield Carlsbad shopping center also presently generates roadway and parking lot noise, and HVAC equipment noise.

As described in the Noise Study (Appendix E), several 15-minute ambient noise measurements were taken at three sites within and immediately adjacent to the SP area, as identified in Figure 4.10-1, *Noise Monitoring and Receiver Locations*, and Table 4.10-1, *On-site Noise Measurements*. Location M1 was adjacent to El Camino Real in the easternmost surface parking lot of the SP area. Location M2 was in the parking area south of the Sear's Department store, adjacent to Marron Road. Location M3 was at the southern edge of the office building parking lot, south of Marron Road and directly below the residential patios of the adjacent sensitive receptors. The measured noise levels were primarily a result of vehicular traffic noise along El Camino Real and SR-78.

**Table 4.10-1
ON-SITE NOISE MEASUREMENTS**

Location	Time (PM)	Measured Noise Level (dBA L_{EQ})	Location Description
M1	1:20 to 1:35	62.5	Near El Camino Real in easternmost on-site parking lot
M2	1:45 to 2:00	59.1	South of Sear's Department Store adjacent Marron Road
M3	2:10 to 2:25	58.4	South edge of office building parking lot south of Marron Road (below residential patios)

Source: HELIX 2012b.

Vehicle counts were conducted for traffic on El Camino Real concurrent with the ambient noise measurement conducted at location M1, as shown in Table 4.10-2, *El Camino Real Traffic Counts*. At this monitoring location, the noise from SR-78 provided a minimal influence on the noise from El Camino Real.

Table 4.10-2
EL CAMINO REAL TRAFFIC COUNTS

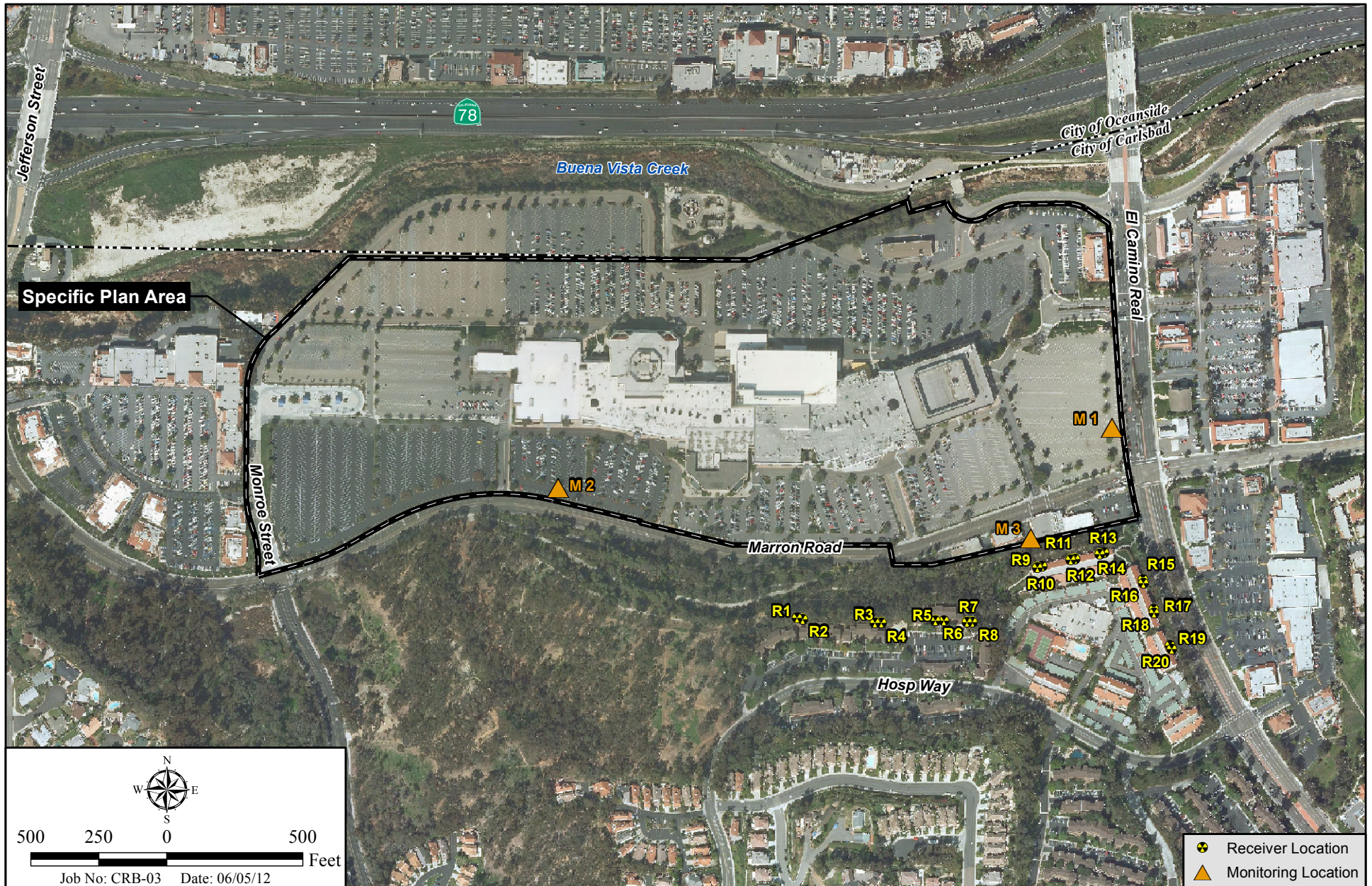
Duration	Autos	Medium Trucks	Heavy Trucks	Total Vehicles
15 minute measurement	428	9	2	439
60 minute hourly average	1711	35	8	1754

Source: HELIX 2012b.

Sensitive Receptors

The closest noise sensitive receptors that have the potential to be affected by the proposed project are the existing multi-family residences (i.e., Waterstone Carlsbad Apartments and Camino Pointe Village) located south of the SP area, which have a full or partial view of the site. These residences are located within the City of Carlsbad. All other sensitive receptors are located at a distance where no impacts from on-site noise generation would be anticipated and where the project-related traffic generation would be minimal (e.g., less than 10-percent change in volume).

To determine the influence existing on-site noise sources would have on noise exposure for surrounding sensitive uses, a series of modeling receivers was established. These receivers, shown on Figure 4.10-1, as locations R1 through R20, were located at the approximate property line edge of the potentially impacted residential properties south of the project site. Each identified receiver represents either a first-story or second-story sensitive receptor, which are analyzed as separate potential impact locations in this analysis. Table 4.10-3, *Existing Sensitive Receptor Noise Levels*, provides the calculated noise levels at the analyzed receiver locations from all of the current shopping center exterior noises. As shown in the table, the existing combined shopping center noise ranges from 29.8 to 59.4 dBA L_{EQ} at the receiver locations. Receptors R8, R13, and R19 currently experience noise levels which exceed the City and County thresholds for nighttime noise, while receptors R9 through R12 currently experience noise levels which exceed the daytime noise thresholds.



I:\ArcGIS\CCRB-03 PlazaCaminoReal\Map\ENV\EIR\Fig4_10-1_NoiseMonitoring.mxd -RK

Noise Monitoring and Receiver Locations

WESTFIELD CARLSBAD

Figure 4.10-1

Table 4.10-3 EXISTING SENSITIVE RECEPTOR NOISE LEVELS			
Receiver Location	Calculated Noise Level (dBA L_{EQ})	Receiver Location	Calculated Noise Level (dBA L_{EQ})
R1	47.7	R11	58.1
R2	49.8	R12	59.4
R3	48.5	R13	55.4
R4	50.7	R14	36.8
R5	47.7	R15	37.5
R6	52.1	R16	31.7
R7	50.6	R17	33.2
R8	52.8	R18	29.8
R9	57.5	R19	57.3
R10	58.7	R20	31.5

Source: HELIX 2012b.

4.10.2 Thresholds for Determining Significance

Appendix G of the State CEQA Guidelines, noise standards established in the City of Carlsbad General Plan, and the County of San Diego Noise Ordinance and guidelines are used to provide direction for determination of a significant noise impact from the proposed project. For the purposes of this EIR, a significant impact would occur if the proposed project would:

- Generate noise levels above the established City noise standards for the proposed uses or if proposed land uses are subjected to noise levels exceeding standards established in the City of Carlsbad General Plan Noise Element and the County of San Diego Noise Ordinance;
- Increase noise levels by 3 dBA in areas that already exceed City or County standards and that would impact sensitive land uses;
- Produce a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project;
- Produce a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project;

- Be located within an airport land use plan or within two miles of a public airport or public use airport and expose people residing or working in the project area to excessive noise; or
- Be located in the vicinity of a private airstrip and expose people residing or working in the project area to excessive noise.

As stated above under *Applicable Noise Standards*, because the City of Carlsbad has no stationary noise limits for nuisance noise impacts in its Noise Ordinances, the analysis of nuisance noise levels in this EIR is based on the County of San Diego regulations. According to the County of San Diego Noise Ordinance, the project would result in significant noise impacts to nearby sensitive receptors if it would produce noise levels that would exceed 57.5 dBA from 7:00 a.m. to 10:00 p.m. and 52.5 dBA from 10:00 p.m. to 7:00 a.m. at the property line between the SP area and adjacent residential areas.

4.10.3 Environmental Impact

Project Noise Impacts

The following analysis discusses potential noise impacts generated during the construction and operational periods of the proposed project. For the purposes of this analysis, it was assumed that the former Robinsons-May building would be demolished in order to analyze the worst-case noise condition during project construction.

Construction Noise Impacts

General Construction

General construction activities can roughly be divided into six phases, with these phases potentially exhibiting some overlap depending on specific locations and timing: utilities excavation, foundation preparation, building construction, finish grading, paving, and landscaping. Site construction would entail the use of heavy equipment throughout the SDP site for the full term of construction. Typical equipment for the proposed type of construction is assumed to include: small dozer, excavator(s), backhoe loader(s), compactor(s), water truck, boom concrete pumper, trencher(s), forklifts, light mobile cranes or sky lifts, grader, paver, compactor, skid steer(s), mini excavator, trencher, and a variety of specific tools including welders, metal shears, and light hand tools. The equipment necessary for the construction phase of the current SDP proposal would be typical of construction equipment used for general office/commercial construction. Typical noise levels for construction

equipment can vary from 60 to 90 dBA L_{EQ} at a distance of 50 feet and would be primarily experienced close to the noise source.

Noise produced by general construction activities would be intermittent and would occur only during the hours and days specified in the City of Carlsbad Municipal Code. Although it could be considered loud at times, construction would comply with the hours for construction set forth in Carlsbad's Construction Noise Ordinance, which has no noise limits for short-term construction activities. General construction noise impacts would be considered less than significant.

Demolition

Demolition on site would likely require the use a variety of equipment, including a “breaker” to demolish concrete footings and concrete structures, portable rock/cement crusher to break up concrete and asphalt, small dozer, loader skid-steer, and dump trucks. Noise impacts were analyzed for conditions where the crushing operation would be located in the current parking area at the eastern end of the shopping center, near the former Robinsons-May building. Breaker noise levels were analyzed for a breaker being used for demolition of the Robinsons-May building. Noise levels at the receptor locations were calculated to range from 60.6 to 66.1 dBA L_{EQ} for crusher operations. The continuous use of a breaker for demolition of the mall structures would lead to noise levels ranging from 34.7 to 63.6 dBA L_{EQ} for breaker operations at the Robinsons-May building. Other demolition operations, including demolition of the parking lot areas, would create significantly lower noise impacts and would not significantly contribute to the ambient noise levels at the receiver locations since there are no construction noise limits in the City Noise Ordinance. The project would, however, comply with the hours for construction set forth in the City Ordinance.

Stationary Noise Impacts

The current SDP proposal would introduce several new or modified operational noise sources, including new restaurants, retail sales buildings, and reconfigured parking lots. These sources are similar to the current site noise sources but include changes and additions to the building square footage, as well as reduced parking areas. In addition to the revitalized main mall area, the current SDP proposal plans to construct three new commercial pads along El Camino Real, the future uses of which would be retail and/or restaurant, but are currently unspecified. The following analysis discusses potential operational noise impacts in the event that one or more of these pads is developed with a restaurant use. Potential changes in noise levels resulting from the parking lot modifications that would occur with implementation of the current SDP proposal also are addressed. Table 4.10-4, *Building Square Footage*, provides a summary of the building square footage for the proposed SDP.

**Table 4.10-4
BUILDING SQUARE FOOTAGE (SF)**

Existing Commercial	1,151,092
Existing Commercial to be Renovated or Relocated	(225,631)
Proposed New Commercial Level 1	150,944
Proposed New Commercial Level 2	110,104
Total Commercial Proposed	261,048
Net New Commercial Proposed	35,417
Future Commercial (Existing plus Proposed)	1,186,509

Source: Hofman 2012b

Loading Dock Sources

The proposed building modifications may include changes to the existing loading docks. Typical noise sources which may be associated with a loading dock are the trucks, truck backup alarm, and trailer refrigeration units, forklifts and the associated backup alarms.

Typical backup alarms generate noise of 97 dBA at four feet at a single frequency of 1 KHz. The impacts from a backup alarm occurring two times in an hour are shown in Table 4.10-5, *Backup Alarm Impacts-Noise Levels*, below:

**Table 4.10-5
BACKUP ALARM IMPACTS
– NOISE LEVELS (dBA L_{EQ})**

Location	Future (With Project)	Location	Future (With Project)
R1	15.7	R11	9.3
R2	20.5	R12	12.1
R3	14.4	R13	8.2
R4	19.3	R14	11.1
R5	12.5	R15	1.6
R6	16.9	R16	2.9
R7	10.8	R17	1
R8	15.8	R18	3.2
R9	10.3	R19	0.3
R10	13.8	R20	2.1

Source: HELIX 2012b

Restaurant Noise Sources

As discussed in Chapter 3.0, *Project Description*, new stand-alone restaurants eventually could occupy the out-building pads proposed in the eastern project area. The restaurant(s) would have several potential noise sources that are typical for food storage, including refrigeration and freezer condensers. The out-buildings also would likely include roof-top (e.g., HVAC) equipment. The potential future restaurant uses other than the rooftop systems and potential outdoor seating areas are not expected to be significant noise generators.

Restaurant Outdoor Seating. While specific planning information for an outdoor seating area is not available at this time because detailed building plans have not been prepared for the out-buildings, a worst-case assumption would assume that an outdoor seating area would be placed on the south side of the restaurant(s) resulting in an average area noise level of 75 dBA. This noise level would be due to normal restaurant operations including patron conversation and general noise associated with restaurant service. The impacts from this level of outdoor noise are shown in Table 4.10-6, Restaurant Outdoor Seating Impacts-Noise Levels, below.

Table 4.10-6 RESTAURANT OUTDOOR SEATING IMPACTS – NOISE LEVELS (dBA L_{EQ})			
Location	Future (With Project)	Location	Future (With Project)
R1	20.4	R11	33.5
R2	25.1	R12	37.6
R3	22.6	R13	33.3
R4	27.2	R14	37.5
R5	24.7	R15	27.2
R6	29.2	R16	31.2
R7	25.5	R17	24.7
R8	30.1	R18	28.9
R9	32.6	R19	22.7
R10	36.5	R20	26.8

Source: HELIX 2012b

The Noise Study analysis did not take into account the use of outdoor speakers or outdoor amplified music systems. Any use of outdoor speakers or amplified music systems would require a specific analysis as part of a future SDP or Noise Ordinance application process for the future out-buildings.

HVAC and Refrigeration/Freezer. Although specific equipment has not been selected, nor is planning information available for the specific equipment locations, this analysis assumes that a typical size and location of HVAC systems would be used in this type of facility (restaurant). The equipment noise levels used in this analysis would be the same as those associated with HVAC systems currently used on site. The calculated noise from the potential additional HVAC and refrigeration equipment to the noise-sensitive receptors in the project area are shown in Table 4.10-7, *Proposed Project HVAC and Refrigeration Impacts*.

Table 4.10-7 PROPOSED PROJECT HVAC AND REFRIGERATION IMPACTS (dBA L_{EQ})			
Location	Calculated Noise Level	Location	Calculated Noise Level
R1	49.6	R11	59.5
R2	49.9	R12	59.8
R3	50.5	R13	57.1
R4	51.0	R14	57.9
R5	48.3	R15	43.8
R6	52.4	R16	44.6
R7	52.5	R17	40.1
R8	53.2	R18	42.1
R9	59.1	R19	38.1
R10	59.1	R20	40.1

Source: HELIX 2012b

Parking Lot Noise

The proposed project would result in a net reduction of 471 parking spaces on site. The minor reduction in parking lot noise due to the reduction in parking spaces would be negligible and, therefore, was not taken into consideration in the future operational noise evaluated in the Noise Study.

Combined Stationary Noise Impacts

Table 4.10-8, *Combined Noise Impacts – Project vs. No Project Noise Levels*, provides the calculated noise levels at the analyzed receiver locations from all of the exterior stationary sources after the Westfield Carlsbad project is completed. As shown, the total stationary project noise impact ranges from 38.4 to 59.9 dBA L_{EQ} at the receptor locations. Although the proposed stationary noise levels reported for R9 through R12 and R14 would exceed the County Noise Ordinance limit of 57.5 dBA L_{EQ} , the existing noise exposure at these receptor locations currently exceeds or is close to approaching this threshold and the increase would not be audible (i.e., under 3 dBA). In addition, stationary noise would be masked by the traffic noise from local roads and SR-78, further diminishing the audible effects of the stationary sources. Transportation noise impacts of the proposed project are discussed below.

Table 4.10-8 COMBINED NOISE IMPACTS – PROJECT VS. NO PROJECT NOISE LEVELS (dBA L_{EQ})				
Location	Existing (No Project)	Future (With Project)	Change	Significant
R1	49.8	50.1	0.3	No
R2	49.9	50.3	0.4	No
R3	50.6	50.9	0.3	No
R4	50.9	51.4	0.5	No
R5	48.1	48.6	0.5	No
R6	52.2	52.8	0.6	No
R7	52.4	52.8	0.4	No
R8	52.9	53.5	0.6	No
R9	59	59.3	0.3	No
R10	58.8	59.4	0.6	No
R11	59.4	59.7	0.3	No
R12	59.5	59.9	0.4	No
R13	56.8	57.5	0.7	No
R14	57.4	58.2	0.8	No
R15	40.6	44.3	3.7	No
R16	39.4	45.2	5.8	No
R17	33.9	40.4	6.5	No
R18	34.3	42.4	8.1	No
R19	31.4	38.4	7.0	No
R20	32.3	40.4	8.1	No

Source: HELIX 2012b

Transportation Noise

Future roadway traffic noise is presented in Tables 4.10-9, *Existing Baseline Roadway Noise*, thru 4.10-11, *Buildout Roadway Noise*, for the Existing Plus Project (Year 2010), Near-Term (Year 2020) and Buildout (Year 2030) conditions with and without the proposed project. The tables present calculated noise levels under two conditions for each receptor location: the noise generated on only the local roadways (without noise from SR-78 included) and the actual noise at the receptor with noise from SR-78 included (which is essentially constant for each analyzed year without regard for project noise). Because both the project and SR-78 have the potential to exceed the allowable noise standards at the analyzed receiver locations, the roadway noise analysis provided noise levels with and without SR-78 to determine if the project noise would be in compliance with the standard allowable maximum of a three-dBA CNEL increase in transportation noise where the existing noise exceeds an allowed standard.

Table 4.10-9
EXISTING BASELINE ROADWAY NOISE
(CNEL/PEAK HOUR dBA L_{EQ})

Location	WITHOUT PROJECT		PLUS PROJECT		Change in Roadway Noise	
	Calculated Noise Levels		Calculated Noise Levels			
	With SR-78	Without SR-78	With SR-78	Without SR-78	With SR-78	Without SR-78
R1	56.8	55.4	57.5	55.4	0.7	0.0
R2	57.9	56.2	58.5	56.2	0.6	0.0
R3	57.2	55.6	57.8	55.6	0.6	0.0
R4	58	56.2	58.6	56.2	0.6	0.0
R5	55.2	50.1	55.4	50.3	0.2	0.2
R6	58.6	55.4	59.0	55.5	0.4	0.1
R7	56.3	51.4	56.5	51.9	0.2	0.5
R8	58.5	53.9	58.7	54.2	0.2	0.3
R9	60.1	56.3	60.4	56.7	0.3	0.4
R10	60.1	56.7	60.4	57.0	0.3	0.3
R11	61	57.7	61.2	58.1	0.2	0.4
R12	60.9	57.6	61.2	58.1	0.3	0.5
R13	61.2	59.3	61.6	59.6	0.4	0.3
R14	61.7	59.7	62.0	60.2	0.3	0.5
R15	66.3	66	66.5	66.3	0.2	0.3
R16	66.1	65.8	66.4	66.1	0.3	0.3
R17	66.2	65.9	66.4	66.2	0.2	0.3
R18	65.8	65.5	66.1	65.8	0.3	0.3
R19	66.3	66.1	66.6	66.4	0.3	0.3
R20	66.0	65.8	66.3	66.0	0.3	0.2

Source: HELIX 2012b.

**Table 4.10-10
NEAR-TERM ROADWAY NOISE
(CNEL/PEAK HOUR dBA L_{EQ})**

Location	WITHOUT PROJECT		PLUS PROJECT		Change in	
	Calculated Noise Levels		Calculated Noise Levels		Roadway Noise	
	With SR-78	Without SR-78	With SR-78	Without SR-78	With SR-78	Without SR-78
R1	53.2	51.1	53.3	51.2	0.1	0.1
R2	54.8	52.8	54.9	53	0.1	0.2
R3	53.8	51.8	53.9	51.9	0.1	0.1
R4	54.8	52.7	54.9	52.8	0.1	0.1
R5	51.9	46.3	52	46.6	0.1	0.3
R6	55.1	51.6	55.2	51.8	0.1	0.2
R7	52.5	47.8	52.6	48.1	0.1	0.3
R8	54.3	49.7	54.4	50	0.1	0.3
R9	55.9	52.9	56.3	53.7	0.4	0.8
R10	56.1	53.4	56.5	54.1	0.4	0.7
R11	56	52.5	56.6	53.6	0.6	1.1
R12	56.6	53.6	57.2	54.6	0.6	1.0
R13	56.6	53.1	56.9	53.8	0.3	0.7
R14	57.4	54.8	57.8	55.5	0.4	0.7
R15	62.1	61.7	62.1	61.7	0.0	0.0
R16	62.9	62.4	63	62.4	0.1	0.0
R17	61.9	61.7	62	61.7	0.1	0.0
R18	62.6	62.2	62.6	62.2	0.0	0.0
R19	62.2	62	62.2	62	0.0	0.0
R20	62.8	62.5	62.9	62.6	0.1	0.1

Source: HELIX 2012b.

**Table 4.10-11
BUILDOUT ROADWAY NOISE
(CNEL/PEAK HOUR dBA L_{EQ})**

Location	WITHOUT PROJECT		PLUS PROJECT		Change in Buildout	
	Calculated Noise Level		Calculated Noise Level		Roadway Noise	
	With SR-78	Without SR-78	With SR-78	Without SR-78	With SR-78	Without SR-78
R1	53.8	51.4	53.9	51.6	0.1	0.2
R2	55.5	53.2	55.5	53.4	0.0	0.2
R3	54.4	52.1	54.6	52.3	0.2	0.2
R4	55.4	53	55.5	53.2	0.1	0.2
R5	52.6	45.9	52.9	46.9	0.3	1.0
R6	55.8	51.8	56.0	52.2	0.2	0.4

**Table 4.10-11 (cont.)
BUILDOUT ROADWAY NOISE
(CNEL/PEAK HOUR dBA L_{EQ})**

Location	WITHOUT PROJECT		PLUS PROJECT		Change in Buildout Roadway Noise	
	Calculated Noise Level		Calculated Noise Level			
	With SR-78	Without SR-78	With SR-78	Without SR-78	With SR-78	Without SR-78
R7	53.2	47.5	53.5	48.4	0.3	0.9
R8	55.1	49.8	55.3	50.3	0.2	0.5
R9	56.4	52.9	56.9	54.0	0.5	1.1
R10	56.7	53.5	57.2	54.5	0.5	1.0
R11	56.6	52.4	57.2	53.6	0.6	1.2
R12	57.2	53.5	57.9	54.7	0.7	1.2
R13	57	52.6	57.6	53.9	0.6	1.3
R14	61.3	60.6	62.5	62.1	1.2	1.5
R15	62.2	61.3	63.4	62.7	1.2	1.4
R16	61.0	60.6	62.4	62.1	1.4	1.5
R17	61.3	60.9	63.0	62.6	1.7	1.7
R18	61.8	61.1	62.6	62.3	0.8	1.2
R19	57.7	54.3	58.5	55.6	0.8	1.3
R11	62.0	61.5	63.3	62.9	1.3	1.4

Source: HELIX 2012b.

The largest change in noise levels for all analyzed traffic scenarios is 1.7 dBA (where peak hour sound levels are equivalent to the CNEL), which occurs in the Existing Plus Project condition. This change is below the allowable change of three-dBA CNEL increase in ambient noise above existing noise levels. Accordingly, traffic noise impacts to the SP area and project- and traffic-related noise impacts to off-site residences would be below the City of Carlsbad thresholds. Thus, impacts from transportation noise sources would be less than significant.

Airport and Airstrip Impacts

The project is not located within two miles of a public or private airport, and is not located within the boundaries of an airport land use plan. There are no private airstrips in the vicinity of the SP area. As such, people working in the SP area would not be impacted by excessive noise generated by such sources.

4.10.4 Mitigation Measures

No mitigation measures are proposed as no significant impacts associated with noise have been identified.

4.10.5 Level of Significance after Mitigation

No mitigation is required; impacts would be less than significant.

THIS PAGE INTENTIONALLY LEFT BLANK